

Home Computing WEEKLY

An Argus Specialist Publication

July 5-11, 1983 NO. 12 38p

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CHIP SHOP MAN SAYS: POP IN FOR A BYTE



Graham Barrow — fish and chips chips

CHIP shop owner Graham Barrow will serve you and chips for 80p — plus a game for your home computer

Graham, 39, has set up a display of computers for the Spectrum, VIC-20 and C64 opposite the frying range of his shop on the busy Upper Richmond Road, Richmond, Surrey

He became attracted to computers while working for Decca — a City financial services company. He left to take over the shop, Paves Fish Bar, eight years ago.

Graham said: "I thought no more about it until a year ago when I bought a VIC-20 — then's when they cost £200 — because I wanted to learn about computers. I bought myself a book and taught myself to program and I wrote a program to help me with the accounts.

"You see of those people who don't like to have incomplete knowledge.

"I found there was nowhere to go in this area for a good selection of software — just the chain stores who only stock a small range. And, in common with most people, I don't like buying through the post. There's a time delay and you don't know what you're getting.

"I got fed up with waiting for someone to open a software

(Continued on page 3)

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Continued from front page

lumen and I thought: "If only this is going to do it, then I will."

"I decided to sell it here because I wasn't confident enough to open another shop — it would mean money, staff and rent — and I've got a lot of space in here."

Soon afterwards, as the computer section is called, officially opens today with a range of tapes from major software houses.

One of Graham's suppliers is Liverpool-based Bug Bits whose joint managing director Tony Baden said: "When I thought about it my gut nearly went down the wrong way."

"Not thinking about it, it seems logical — a lot of kids go in there and a lot of shop shops have arcade games."

"I'm not really being told anywhere that arcade machines are sold at present. The market's big enough for everyone to have a share."

Graham lives above the shop with his wife Wendy, 28, and two daughters, Emma, five, and 12-month-old Charlotte.

And what does W.H. Smith — with a store just a few miles away — think of the competition? A spokesman said: "I would be delighted to meet about group buyers on the bookshelves..."

TV with a difference

Home computer users who race into microsoftware bookshops may be interested in Philips new 3800 TV set — because it incorporates a printer. The printer can be used to copy out listings of broadcast programmes, as well as copying any selected page.

The printer is housed in a spring-loaded drawer to the right of the screen, and uses standard paper. Three rolls of paper are supplied with the set, and each roll will hold 175 screen pages.

Philips, City Mouse, 420-490 Chesham Road, Croydon CR9 3QR

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SOFTWARE INFORMATION

Over the moon

Orion Software is over the moon about its first program for the BBC 2001. Called Moonlander, it's based on the NASA Apollo series in 1969 when Neil Armstrong became the first man on the moon.

According to Orion, Moonlander is a measure of luck and skill. Random factors include his height and amount of fuel used mean that no two attempts are the same. But to land successfully demands skill and practice — fortunately Orion's a practice expert.

Orion plans to follow Moonlander up with a graphics aid for the ZX81 and Spectrum, to be released within about six weeks. Orion ZX software will be released soon. Orion, Poppleton Mill, London Road, Dorking, Surrey RH4 1JF

From Rubik to RAM

Patrick Rogers, who wrote You Can Do The Cube when he was 15, hopes to repeat his success with a collection of home computing games.

Called Micro Games, the book will cater for both models of BBC users, the Spectrum, ZX81 and Research Machines 1602 and 1602.

Patrick Robinson, who co-authored Micro Games with Patrick, said: "I have set all sorts of them — some speed-rotation types and some working through puzzles."

Patrick, who has now reached the ripe old age of 15, is currently doing O-levels. In his spare time he enjoys programming his BBC Model B, which was bought with some of the proceeds from You Can Do The Cube.

Proquest is also hoping to encourage more young programmers by sponsoring a National Micro Competition which opens in September.

Proquest Books, 37/3 King's Road, London SW10 0EY

A NEW SERIES FOR FIRST TIME USERS

These titles are the latest in a new series of books which introduce newcomers to the most widely used micros in the marketplace.

The "Learning to use" series of books assume absolutely no knowledge about computers and the reader is shown even the most fundamental operations such as "switching on" and "loading a program". The books lead the reader through simple programming and then onto graphics, with several programs which show how to achieve pictures and even animation.

The user-friendly approach is consistent throughout the text – not only are programs listings clearly shown, but in many cases, a photograph is included to show what the program looks like when actually loaded and run.

The books contain a number of specially written programs which show the full potential of these machines.

£5.95



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HEALTH-CARE PROVIDERS AND SOFTWARE
in Florida Court Pending Recall
Health-Net, Inc.

doi:10.1017/S0022292412001772

Figure 1

[illegible]

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READ-OUT



THE NEW YORK TIMES MAGAZINE is not merely a magazine that makes developments in your field an object of interest. In covering psychology, music, dance, by offering you the full range of opinions, we can choose how to present your work through the magazine. A full representation of the program, and the most important and interesting aspects of your field, is made possible. We are proud to have the opportunity to publish your work in the magazine. We are proud to have the opportunity to publish your work in the magazine. We are proud to have the opportunity to publish your work in the magazine.

FOURTH: A full implementation. Ideal for writing full research reports that require. Allows the full extent and sound features of the program to be used. Future Microsoft enhancements will be made available.

100

ADVENTURE-DOM Features a new game routine to the game that will make it complete a completely good reason... will watch the movie *Spider-Man*.

2001 2002

QUESTION: A fast action on a game that reproduces the spirit of the original.
ANSWER: Yes, it does. And fast? **Worth a try?**

Keywords: child sexual abuse; disclosure; social support

CHALLENGE You decide if you will use the new program. List the pros and cons. Display it to a class and discuss. **Teacher's Corner**

THE

DISCUSSION: Very few, if any, studies require close and consistent attention to detail.

1000

THREE APPEAL ROWS
AND A FOURTH ROW





Yes, she talks... Julie Wilson, 24, with Commodore's Sweet Talker

Nothing to ad?

Complaints by members of the public have got most major companies onto (inadequate with the Advertising Standards Authority by

This time Dragon Data is in the doghouse because of an advert in national papers.

They said that "the power of a computer is measured in terms of RAM — standing for Random Access Memory". But after seeking expert advice, the ASA agreed with the claim that this

amount of RAM was a measure of memory size, rather than measurement of the computer's power.

Two software companies were also criticised for advertising programs that they couldn't deliver either. D J Moody Software, of Beaufort, North, failed to deliver the goods, despite an ad that stated: "Orders despatched within 48 hours".

And a note from Wincambe complained that he had ordered a game called Mail Menz from Merlin Micro Systems, of Cleveland, in March 1981, and had not yet received a despite claims in a recent Merlin ad that it was "ready to go".

Advertising Standards Authority, Broad House, Torrington Place, London WC1E 6AN

Micros? A piece of cake

If you're still hesitating whether to take the plunge and buy a micro, there's a new paperback due out at the end of this month which could make your decision easier.

First Steps, to publishers 140, "written for the ordinary person who wants to know what possible use a computer could be to him" — or her, presumably.

It looks at how computers developed, explains the principles of programming, and introduces the micros you're most likely to meet, along with their advantages.

It explains the uses of a home micro, from games to word processing, and some developments expected in the near future.

First Steps is written by Mike Scott Roberts, author of science fiction novel Run to the Stars. Mike's enthusiasm for computers evidently reached to his books. First Steps's book jacket

features a computer made of cake, baked and sold by Mike's wife. First Steps costs £3.95.

EP Publishing, 440a Acton, Whitefield, West Yorks WF3 2BN

Curses... it talks back

Don't curse your computer when it won't do what you want — it just might start talking back.

In fact Commodore, which has just brought out the Sweet Talker plug-in unit for the Spectrum and ZX81s, uses a program to check its modules which can sometimes "P... off".

Joint managing director Melvin Barnford said: "This shows you how wide the range in the vocabulary really is understood."

The company makes the same claim about the £14.95 Sweet Talker as a module which can range of RAM packs. They are cheaper than the competition.

Mr Barnford said the speech module was £5 less expensive than the two main competing products and that it did not involve opening the computer.

He expects it to be used in programming by saying things like "warning — module crash" in game areas and reduces it could even be used in with the three down bell.

Sweet Talker, which comes with a booklet and demonstration tape, is programmed by typing in numbers for each part of a word or phrase which are then "spoken" through a 2-line speaker.

There is no volume control and there is no facility to connect to a large speaker. Apart from the back there's other peripherals to be attached.

Commodore's next new product will be a Spectrum light pen.

Commodore Marketing, 118 The Strand, London WC2

Computers shores it out

Computers, which brought you the Lyons, is selling off shares to raise a further £900,000 for product development.

The money will go towards getting the final machine to the 128K Lyons, due out this autumn with a £440 price tag, its disc drives, scheduled for August, and to more Lyons, estimate it will also enable Computers to make more of the standard Lyons.

Should you have 1000 to gamble on the bank market, you might be interested to know that holders of 3,000 or more shares, at 15p each, are entitled to a 30 per cent discount on Computer products.

Computers, 114 Bridge Street, Cambridge CB2 1AB

The Latest Aid to Programmers of Commodore 64's and VIC-20's.

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ESSEX IG1 2SN

WE HAVE THE KNOW-HOW!
WE HAVE THE BACK-UP!

More stores, more micros from Tandy

Tandy, the world's giant electronic mailing chain, is growing even bigger here with 25 new stores and 36 new dealers due to open this year.

And the company has just launched four new computers in the UK. They are:

- The Model 100, retail for £1,500, which costs £499 and is the size of A4 paper. It comes with a 40 character by eight line liquid crystal display, 8K of RAM, 12K of ROM, including a word processor, a diary as well as Microsoft BASIC, 20-hour batteries and parts for RS-232 and Centronics printers and 1500 level cassette, compatible with the new Model 4.

- The Model 12, retail for £299, which has 80K of RAM — expandable to 128K — seven and a half floppy disc.

- The Model 4, priced at £1,400 with 64K of RAM, expandable to 128K.

- The PCA, £49, an addition to Tandy's range of small local field micro.

School plans autumn computer fair

A Mahon Garden City school has hit on an interesting way of raising funds — by holding a computer fair.

The Sir Frederic Osborn School's fair will take place on Sunday October 2, from 10.30 am to 4.30 pm.

Robert Brown, head of the school's technology and design department, who is organising the fair, said, "The proceeds of the proceeds will go to the school fund, we intend to charity, and the rest will go towards improving the school's computer facilities."

"We've already got three Research Machines 3402s — two we bought and one our teachers won in a competition — and two Spectrums. But we'd like to buy two BBC Micros as well."

There will be a maximum of 10 stalls in the fair, and stands are £8 each.

The Sir Frederic Osborn School, Morris Lane, Mahon Garden City, Merz AL2 2AF.

Managing Director John Stevens said this year the company would grow to 250 Tandy-owned stores — most of the new ones would be computer centres — and 817 authorised dealers.

Asked about the company's low public profile, Mr Stevens said: "We may not have marketed as aggressively as some others and maybe we are not as profitable as, say, Dragon or Sinclair, but we are very happy and we sold out of our Colour Computer at Christmas."

"With the Model 100 we have something which is exciting and this guarantees the feedback," Tandy Corporation, Turney Tower, Andover, Dorset, Wiltshire BS27 4LD.

Forbidden adventure

Kensara has added four new programs to its One software range but before you venture into Hall's Temple, the game adventure game, you'll have to answer one question: have you got an adult with you?

Not that there's anything too far from the Temple. According to Kensara's Brian Green, the operators must be a cunning psychological play.

"We want to stimulate youngsters into getting involved in adventure games", he said. "If we say that they can only use the program accompanied by an adult, the first thing they'll want to do is look into the program and see what's going on."

"We're hoping to get away from tape-type games and move towards the sort of game that makes your brain hurt."

Having said that, though, Mr Green admitted that there was a Spectrator game, One Invasion, at the time of publication.

The other new programs are The Sea, a database program, and Executive Monitor, which allows the user to be programmed and debugged in machine code.

The programs will be priced around £15 — again from One Invasion, which will cost about £5. They will be available about two weeks.

Kensara, 1 Marlborough Drive, Merz, Avon BS22 0DQ.

Let the buyer beware

Marketing in the microcomputer industry is a real trouble spot.

Not so many years ago, before the micro boom began, computers were only available through specialist dealers. Now more advertising and the numerous magazines on the subject means that more and more computer products, on sale in high street chain stores.

But can these stores really offer the kind of support a micro buyer needs? Their staff aren't specialists, they may well have no particular interest in computers and no business in deep analysis of developments in the industry.

To the question, "Will it do the account for my corner shop?", it's very doubtful that an adequate amount of suitable demonstration could be given by a staff who are not in a large open plan store, where queues of other customers are waiting.

Only recently the press asked that the Apple computer was no longer being supplied by a number of retail outlets, because these outlets couldn't give it adequate support. For whatever reason, Tandy's range of computers is now mainly stocked by an own chain of stores where, it is hoped, the staff can be given proper training.

But retail outlets aren't the worst of it. At least there you have some where to take a product back to should problems arise. With mail order, returning goods can be quite a problem — assuming the goods arrive in the first place.

A year ago I was worried when a well-known microcomputer journal for a certain price of software. After phoning the company and being assured that the product was available, I sent off the payment.

When the product didn't turn up after a week, I phoned the company again and was told the goods had been sent. A further week passed, and more contact was made about the product's whereabouts.

To cut a long story short, an investigation agency discovered that the payment was made before the goods were sent, and a lot of people had been trying to trace the company's whereabouts. Quick action was suggested.

Two notices of action were sent to me (after they putting it down to ignorance) by and to the owners and were a nuisance through the small claims system of the courts (which, as only on the Mail Order Protection Scheme that many magazines belong to).

My first act was to inform every magazine I subscribed to, and the response from some was an eye-opener.

Some were unwilling to reveal who they were due to be published because they would have a black eye. The magazine that another advertiser was given a free, or not given, advertisement it was rejected.

The ads are for a further two months and, as I understand it, some of them were paid for.

All indications have their share of problems, particularly in the early stages. But the microcomputer industry is growing very fast and the product is very complex. Most of the buyers are either young or have no knowledge of the products or both. A lot more guidance for the buyer is needed — both from retailers and from the press.

David Bell
Telford
Shropshire

• This space is for you to sound off about the micro scene, to praise or speak or to bark criticism. Share your views by sending them to Paul Lipson, Options, Home Computing Weekly, 145 Charing Cross Road, London WC2R 0EE. Please include your occupation and your interest in computing.



Beeth-Ex expands the BBC's potential

Pick a card — for the BBC

BBC owners with big ambitions for their machines can use Control Universal's Beeth-Ex interface to connect the micro to a range of peripherals.

Beeth-Exs are standard-sized printed circuit boards which can be used as the elements of a tailor-made computer system.

Used with the BBC Micro, they can provide up to 1 megabyte of extra memory in the form of worded "pages", and allow the micro to be connected to a wide selection of industrial quality input and output devices.

Beeth-Ex consists of a ribbon connector to the BBC's 1 MHz bus port, and comes in two formats. The first, costing £49, is a stand-alone unit which allows four other Beeth-Exs to be slotted in.

The second costs £41, and will slot into a standard rack-mounted Beeth-Ex system. Control Universal, Unit 2, Ashdown Court, Ninesham Road, Cambridge CB2 9EJ.

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We welcome programs, articles and tips from our readers.

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ARTICLES on using home computers should be no longer than 3,000 words. Don't worry about your writing ability — just try to keep to the style in NOW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

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Paul Liggett, Home Computing Weekly, 145 Charing Cross Road, London WC2N 6BS

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QUITE SIMPLY THE BEST

[illegible]

Mario 48K Oric-1 £6.95

Screen Software, 1 School Close,
Lynley, Glasgow G4 11 5TA

Mario is a masterpiece in being the first commercial Oric program I have seen to run fast and the best.

The Master of Magic, from the book Lord of the Rings, are the ancient lords of Dora's folk, the deservet Long-dead, they contain hoards of jewels and gold, protected by magic and evil powers.

Your task is to search for Dora's Ring through a number of levels in the main — represented each by a grid of 8 squares.

When you meet a monster you can choose fight, retreat, and wounds and strength levels are recorded. Love more than 10 lives or less than 10 strength and you are dead. Watch out — the parents may call with your body for ransom. Not so it should be!

To help you in your quest you can buy spells from the wizard or assassin from the trader, at a price.

screenplay	95%
playability	80%
graphics	80%
value for money	85%

★ ★ ★

Zodiac Oric-1 £6.90

Tatnell, 1 Club Street, Ry,
Cardiff CF99 2TF

Zodiac is Tatnell's first when time for the Oric, and it's pretty good.

The game begins with you being immediately dumped in a city street. You then have to work out the pattern signs of the Zodiac, finding new locations and spots of interest as you go.

The game seems to have quite rapid resolution of ideas, and words and observations. Though it is not that some of its responses take a day or more to

There are quite a few locations to wander around some of which are described in astonishingly full detail.

Generally I found the game more to play on than to work at, which is a good combination — a game that won't let you out of the first room seems pretty tedious. My only real complaint (that's the word, graphics) and colour features of the Oric seemed to be underused.

screenplay	40%
playability	80%
graphics	50%
value for money	70%

★ ★ ★

Grail 48K Oric-1 £6.95

Screen Software, 1 School Close,
Lynley, Glasgow G4 11 5TA

As a knight of the Round Table, you have to explore a few bare mountain ranges of the Holy Grail. In your wanderings you come across monsters, wizards, wizards, and the like — and the magical knights that you can change for strength, points and wound levels. The wounds, and you're a knight!

Each level of the game is shown as a 30 by 10 grid, and as

you move about the screen, knights, stones, wells and weapons, you have detailed weapons. The game will present you with problems and propose the quality of your skills to solve the special puzzles that you must find the on-screen instructions.

I loaded this game, even on the fast speed, and it was not fast. It took long in all very well, but the game will be more a test of all levels than will. I found it boring after a while.

screenplay	80%
playability	60%
graphics	70%
value for money	60%

★ ★ ★

Got a taste for adventure?

Carry out feats of courage and daring without leaving your living room with these adventure games

Pharaoh's Tomb 48K Spectrum £4.95

Phalan Associates, 60 East
Green, Ipswich, Suffolk IP1 1EA

When first created, this looks like an obscure adventure game with good ideas in a modest graphics and animations, with features in the top half of the best half, a 100 points.

The aim of the game is to enter the tomb and collect the treasure from various locations, knowing the implications you may find there.

As there's only one thing that I could find, and the treasure and objects were always in the same place. The problems that could be you are pretty easy to solve.

So other people have right the way through the game there are no surprises left. To make matters worse, being warned in the main menu to play slowly. On the other hand it's moderately priced.

screenplay	80%
playability	50%
graphics	100%
value for money	80%

★ ★ ★

Time Warp Atari 400/800 £14.95

English Software, 50 Newton St,
Farnborough

The game is supposedly set in a distant land, created by an evil time lord (Doctor Who's speciality). You have to pick up the objects they left behind in a machine that can transport, transport and to go.

Occasionally a spider will attack or rob you, but you have to choose these dangers. It is

an ancient land? The game looks at an amazing on paper and it's far more interesting to play to find out why than in exploring the game.

I played for an hour with a friend, reached level 2 of the land, reached a new castle like level 1, and departed. It'd like to say something more about Time Warp, but I can't.

screenplay	80%
playability	80%
graphics	70%
value for money	70%

★

84

Get out of that . . . it's not as simple as it seems

Now Get Out of That! is a game more of strategy than of quick reactions. You have the same objective as your opponent, the 48K Oric — to take the other in, so no character is left except to explode with the traps you have both made.



If you are forced to consider the computer's moves a pain to the sound of a tapping typewriter, but if the computer is forced to crash, you get a point to the sound of gongs.

The game, however, is not as simple as it may seem because both you and the computer can wrap around the screen when you move over the edges.

For example, if you go over the top you reappear at the bottom; if you leave the left hand side, you reappear on the right. As the game progresses, and the screen fills up with traps, you have to be careful where you escape after wrapping around.

If you try to imagine the screen as a diagrammatic representation of a spherical playing area, you will realize how tricky the game can become.



You're pitted against the computer in John Wright's game for the 48K Oric-1. Who will crash first?

When the program is run, the screen and keyboard click are turned off, clocks displayed and an opening tune played. Instructions are then given and the message PRESS ANY KEY TO START THE GAME is flashed on the bottom of the screen. On doing so, a border is present and the score line appears at the top of the screen.

You use the cursor keys rather than the Oric's special keys to change direction. You do not have to hold down a key to continue moving in any particular direction. Press a key to change direction.

You will see an H and a C appear (Hamon's pet and Computer's pet), both of them already moving, so be careful not to turn back or yourself in the game of each round. Stop the game using control C.

Note that when the messages are displayed, all the PRINT lines must be included (as in the listing). This is because double height characters have to be on a certain number of lines down from the top of the screen. Try leaving out one of the PRINT statements to see what happens.

Also note that line 245 is for the computer to change direction to a pseudo-random basis. It can be changed to:

```
5 = INT (RND*(14-100))
IF S=0 THEN 230
```

This will speed up the computer's move rate. Line 240 could be replaced by IF RND(1) < 1/14/14 100 try other values and see the effect. Note that the computer takes a brief time to decide which direction to turn when its route is blocked. This gives it the edge when both of you find yourselves boxed in.

The turn-player for the beginning of the game is contained in T1 and you can alter these

numbers to play a different tune which can be up to 255 notes long. (255 is the maximum string length the Oric can handle).

The machine code held in DATA statements on lines 152-180 is POKE'd in location Hex 400 for 3804 decimal using a REPEAT UNTIL loop. This routine is given in this Oric manual on page 128 and enables the machine code to be supported by the Oric 1b using PRINT AT X, Y, "ORIC1".

It is used in the program to print the updated scoreline. Note that, because the code is POKE'd to Hex 400, it is processed from being HEX'd by BASIC.

You might like to redefine the H and the C characters to give

Many can remember the Oric screen format is 40

by 24. PRINT CHR\$(0) sets double height characters. PRINT 4:GOTO 170 turns off the screen. PRINT CHR\$(0) sets off the keyboard click.

To control the Oric 1B PEEK, makes the line wrap double height characters. Similarly, the use of PEEK in line 240 sets double height mode. In both cases, PRINT CHR\$(0) turns wrapping double characters.

PEEK 7 sets background to white. PAPER 3 sets background to magenta.

and the Oric 1B PEEK, makes the line wrap double height characters. Similarly, the use of PEEK in line 240 sets double height mode. In both cases, PRINT CHR\$(0) turns wrapping double characters.

more interesting shapes, and also to speed up the computer's choice of a new direction when its forward position is blocked.

As the program starts, if the computer is moving left or right then D = 9. If this direction is blocked a will look for another direction but it could choose 9 again, that slowing it down because it has to return again to find another number of give a new direction.

```
10 PRINT CHR$(0);CHR$(17)
20 GOTO 770
30 Q=0:W=(INT(RND(1)*4)+0
40 GOTO 440
50 GOTO 370
60 GOTO 400
70 I=0:"ATOL" "Y"*****
"Z"0
80 GOTO 50
90 K=KEY$
100 IF K="" THEN 90
110 IF K="C" THEN H=ASC(K)
120 IF K="D" THEN H=0
130 H=H+(L*AND(H)=L)-(L*AND(H)=L)
140 IF H=4+(L*AND(H)=10)-(L*AND(H)=1)
150 IF H=30 THEN H=0
160 IF H=24 THEN H=3
170 IF H=27 THEN H=0
180 IF H=27 THEN H=24
190 IF SCRN(H,HY)=0 THEN 240:WAP=EXPLODE:8=8+1:GOTO 50
200 PLST(H,HY,200
210 H=0:H=0
220 H=H+(L*AND(H)=L)-(L*AND(H)=L)+CX
230 H=H+(L*AND(H)=10)-(L*AND(H)=1)+CY
```

ORIC-1 PROGRAM

```

240 S=INT(RND(1)*1000)+170:BAT=H050
250 IF P0=35 THEN P0=2
260 IF P1=24 THEN P1=2
270 IF P0=02 THEN P0=35
280 IF P1=02 THEN P1=24
290 IF SCRHC(P0,PT)=032 THEN B0T035#
300 IF SCRHC(P0,PT)=13=032 THEN B04#
310 IF SCRHC(P0,PT)=13=032 THEN B04#
320 IF SCRHC(P0,PT)=13=032 THEN B04#
330 P[0]H=H0T10:P[0]H=EXPLODE:Y=Y+1:H0T00
0
340 CX=PX+CY+PT:PLOT CX,CY,195
345 GOTO30
350 D=INT(RND(1)*4)+0
360 GOTO30
370 CX=INT(RND(1)*24)+2:H0=INT(RND(1)*24)
+2
380 CY=INT(RND(1)*24)+2:H1=INT(RND(1)*24)
+2
390 RETURN
400 CLS
410 FORM=1000:PLOT1,1,0:PLOT1,25,0:HENT
420 FORM=1000:PLOT1,1,0:PLOT1,25,0:HENT
430 RETURN
440 CLS:H0=0:PAPERS
450 PRINT
460 PRINTCHR$(4):CHR$(27):"NOW GET OUT
OF THAT!"
470 PRINTCHR$(4)
480 GOTO350
490 PRINT:PRINT:PRINT
500 PRINT"Use the sensor keys to steer"
510 PRINT:PRINT
520 WAIT200
530 PRINT"You cannot jump on your own!"
540 PRINT:PRINT
550 WAIT200
560 PRINT"Nor can you collide with"
570 PRINT:PRINT
580 WAIT200
590 PRINT"Let's see computer trail!"
600 WAIT200
610 PRINT"Let's see our trail!"
620 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
630 FORM=10000:HENT
640 PRINTCHR$(4):CHR$(27):"PRESS ANY KE
Y TO START THE GAME"
650 IF GET14="" THEN H050
660 PRINTCHR$(4)
670 RETURN
680 T4="12341234123456789012345678901234"
690 FOR L=1 TO LEN(T4)
700 H=ASC(RIDNCT4,L):L=L+1
710 MUSIC(3,H):MUSIC(4,H):
720 PLAY,B,1,1000

```

```

730 WAIT10
740 NEXT L
750 WAIT100
760 RETURN
770 REPEAT
780 READDTA
790 MOVE#400:HCL,DTA
800 CL=CL+1
810 LHE:1000=OFF
820 DNT#20,800,800,800,800,800,800
830 DNT#00,800,800,800,800,800,800
840 DNT#00,800,800,800,800,800,800
850 DNT#00,800,800,800,800,800,800
860 DNT#00,800,800,800,800,800,800
870 RETURN

```

SOFTWARE CASSETTE FOR THE ZX SPECTRUM (PAL/UK)

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Figure 30. Lateral cephalometric radiograph, September 1987

TI-99/4A PROGRAM

```

300 Z=Z+1
310 GOSUB 830
320 FOR L=1 TO C
330 CALL HOMEW L-24L,145)
340 NEXT L
350 CALL HOMEW(PH,CL,145)
360 REM INCOMM KEYBOARDS
370 CALL KEYB(F,S)
380 IF S=0 THEN 430
390 IF CL=3 THEN 460 ELSE 480
400 GOTO 1040
410 REM TRACE ERR
420 IF CL=0 THEN 430
430 CALL HOMEW(PH,CL,45)
440 IF RM=0 THEN 510 ELSE 520
450 RM=25
460 PH=PH-1
470 CALL HOMEW(PH,CL,55)
480 IF GO=104 THEN 550 ELSE 570
490 GOSUB 1350
500 GOTO 430
510 CALL HOMEW(PH,CL,144)
520 CALL SOUNDF-50,-3,2)
530 GOTO 430

```

```

900 GOTO 950
1000 FOR CT=00 TO 4 STEP +2
1010 CALL VORWARF CT,120,120
1020 NEXT CT
1030 FOR CT=00 TO 4 STEP +2
1040 RANDOMIZE
1050 PW=INT(CS=0+1,4000)/40
1060 PW=INT(21-5+1,4000)/40
1070 IF C=1 THEN 1090 ELSE 1170
1080 CALL VORWARF CT,120
1090 CALL VORWARF CT,120
1100 GOTO 1180
1110 IF C=2 THEN 1120 ELSE 1170
1120 IF PW=1 THEN 1040
1130 CALL VORWARF CT,120
1140 REMARK
1150 CALL VORWARF CT,120
1160 GOTO 1180
1170 CALL VORWARF CT,120
1180 IF INT(4000/40)=0 THEN 1190 ELSE 1200
1190 IF COUNTER THEN 1200 ELSE 1200

```

```

620 REM BARRY 583
630 IF K<700 THEN 740
640 CALL WCHRR(M,CL,95)
650 IF M=22 THEN 640 ELSE 670
660 M=M+1
670 CALL SCHRR(M,CL,60)
680 IF G=124 THEN 680 ELSE 700
690 GOSUB 1350
700 GOTO 430
710 CALL WCHRR(M,CL,145)
720 CALL SQRNR(20,-1-2)
730 GOTO 430
740 REM BARBY 584
750 IF K<500 THEN 430
760 CALL SCHRR(M,CL-1,60)
770 IF G=120 THEN 770 ELSE 770
780 GOSUB 1350
790 GOTO 430
800 CALL WCHRR(M,CL-1,95,2)
810 CL=CL-2
820 CALL WCHRR(M,CL,145)
830 GOSUB 1350
840 IF CL=2 THEN 1040
850 GOTO 430
860 REM SUPPORT ROUTINES
870 V=15-INT(LEN(M)/2)
880 FOR I=1 TO LEN(M)
890 CD=ASC(SCHRR(M,I,1))
900 CALL WCHRR(2,V+1,60)
910 NEXT I
920 RETURN
930 REM RESET UP WALLS
940 CALL COLOR(2,2,9)
950 IF G=1 THEN 950 ELSE 970
960 M="15 SECS TO REMOPIZE THE MAZE."
970 GOTO 300
980 M="8 SECS TO REMOPIZE THE MAZE."
990 2=2+1

```

```

1200 COUNT=COUNT+1
1210 GOSUB 1205
1220 NEXT CT
1230 GOSUB 1470
1240 IF G%1 THEN 1270 ELSE 1260
1250 GOSUB 1470
1260 RETURN
1270 REM SPRINT ROUTER
1280 SPRDCHISE
1290 PRINTC-21-5+5)PAGE)4
1300 IF F1=00 THEN 1340
1310 IF F1=00 THEN 1300
1320 IF CT=0 THEN 1340
1330 CALL HERRROW CL=0)
1340 RETURN
1350 REM SPRINT ROUTER
1360 CALL SOUND-500-5.2)
1370 CALL HERRROW CL=0)
1380 SC=SC+1000
1390 HERRROW SCAL=
1400 Z=0
1410 V=0
1420 GOSUB 670
1430 CALL HERRROW CL=140)
1440 GOSUB 1470
1450 RETURN
1460 REM SPRINT WALL SET
1470 FOR X=1 TO 5
1480 CALL COLOR 12.5-5
1490 CALL SOUND-100 000 2)
1500 FOR T=1 TO 250
1510 NEXT T
1520 CALL COLOR 12.5-0)
1530 CALL SOUND-100 000 2)
1540 FOR T=1 TO 250
1550 NEXT T
1560 NEXT X
1570 CALL COLOR 12.5-3)
1580 RETURN
1590 REM BATHROUGH 100.00

```

TI-99/4A PROGRAM

```

1600 CALL SOUND*(500,443.2)
1610 CALL SOUND*(400,593.2)
1620 CALL SOUND*(300,659.2)
1630 CALL SOUND*(200,698.2)
1640 CALL SOUND*(100,764.2)
1650 SC=SC+100
1660 NR=STR$(SC)
1670 Z=0
1680 V=0
1690 GOSUB 870
1700 RETURN
1710 REM PRINT WALLS
1720 CALL SOUND*(500,196.2)
1730 CALL SOUND*(500,167.2)
1740 CALL SOUND*(500,137.2)
1750 IF SC=0 THEN 1800
1760 SC=SC-75
1770 IF SC<0 THEN 1780 ELSE 1730
1780 SC=0
1790 NR=STR$(SC)
1800 NR=STR$(SC)

```

```

0100 AM=14
0200 CL=21
0300 SC=0
0400 COUNT=0
0500 IF SC=0 THEN 0200
0600 SP=SP+1
0700 G=0+1
0800 GOTO 100
0900 REM RESET-UP VARIABLE
1000 COUNT=0
1100 SP=0
1200 SC=0
1300 G=1
1400 SC=14
1500 CL=21
1600 RETURN

```



```

1000 Z=0
1010 V=00
1020 GOSUB 870
1030 RETURN
1040 REM SUBFINISH ROUTINE
1050 CALL SOUND*(500,500,2)
1060 CALL SOUND*(500,500,2)
1070 CALL SOUND*(500,700,2)
1080 CALL SOUND*(500,500,2)
1090 CALL SOUND*(500,500,2)
1100 CALL SOUND*(500,500,2)
1110 CALL SOUND*(700,500,2,0.000,2,1000,2)
1120 REM WELL DONE YOU MADE IT!
1130 Z=0
1140 GOSUB 880
1150 IF (Z=1 AND SC=1000) THEN 1000
1160 IF (Z=2 AND SC=1000) THEN 1000
1170 IF (Z=3 AND SC=700) THEN 1000
1180 GOTO 2100
1190 REM AGAIN PLEASE
1200 CALL CLEAR
1210 CALL SCREEN(0)
1220 PRINT "#####"
1230 PRINT "#####AGAIN PLEASE#####"
1240 PRINT "#####"
1250 PRINT "#####"
1260 PRINT "#####"
1270 PRINT "#####SPACE BAR TO RESTART"
1280 PRINT "#####"
1290 PRINT ".....TO PLAY AGAIN....."
1300 CALL KEY$(K:J)
1310 IF J=0 THEN 2100
1320 CALL CLEAR
1330 IF K=32 THEN 2100
1340 END
1350 GOTO 100
1360 REM FINISH SHEET
1370 FOR N=1 TO 500
1380 NEXT N

```

لا تتركوا



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[illegible]

Game for a quiet life?

If you want to leave the sound of zapping far behind, these games enable you to use your head, not your trigger finger.

Brainstorm Spectrum £4.95

Micrograph, 100-116 Lymington Rd, London SW11 4LE

Two puzzles, Brainstorm and Puzzle, are best played in Brainstorm, and you discover number sequences at which test combinations on a grid are revealed individually for its several, then blanked off again.

When you discover number 1, the column uncovered, and so on for 2, 3 etc, until all the numbers have been exposed in the correct sequence. (You're

probably played this type of game with cards laid face down on a table.)

Puzzle is a computerised version of another game you've probably played before, where you shuffle known numbers into the plastic tray until they're in alphabetical order.

The programs are well written, well drawn (graphical and well presented, but I don't think they will set any pulses racing. Few games are needed, not all your money here.)

instructions	90%
playability	80%
graphics	90%
value for money	90%

★ ★ ★

Othello 48K Oric 1 £6.50

Konami, 1 Marlborough Ave, Woking, Surrey

Also known as Reversi, this game involves the capture of opposing pieces by moving them into your colour. The object is to fill more of your coloured squares on an eight by eight board at the end of the game than your opponent. In this version, you can play against a friend, against the computer, or watch the computer play itself.

July 1987 suffered from loading difficulties from through a win card in 100 hour) and,

despite several attempts, I could not obtain the on screen manual from without a program crash.

The high resolution display is well laid out, but for a "thinking" game (that the sound effects are a little excessive, ZAP when reversing pieces, PING at the end of a move).

Oric's thinking time is pretty fully slow, and to have the computer play itself isn't being too quickly. Luckily, a human can take over at any stage.

instructions	80%
playability	70%
graphics	80%
value for money	70%

★ ★ ★ ★

Dallas 48K Spectrum £6

GCS, 14 Langton Way, London SE23 1TL

Do you have visions of noble knights and regal castles? Imagine doing magic duels over brook fens in the great north. South Park, that is so, the program (but almost nothing to do with it, apart from pushing the mouse).

It's basically a simulation of oil discovery, well development, and oil production which, if successful, results in your taking over Eume Associates (and if you fail, they take you over).

Scenarios, the program doesn't end when loaded. When run it reveals a map of an area near Dallas with grid coordinates, together with lots of financial/production info.

You can survey the plot for oil before they come up for sale, then if you find high enough, you then start on the rather long-winded process of well development.

instructions
playability
graphics
value for money

★ ★ ★

Code Break TI-99/4A £3.50

Chapman Computers, 4 Phoenix Close, Watford, Herts

Code Break works on the same principle as Mastermind (the game, not the TV programme).

You have 12 attempts to guess a hidden sequence of colours and shapes, and after each attempt the computer tells you the number of correct colours, correct shapes and objects in the correct position. From the information a given you, you have to work the sequence out.

If you have a TI-99/4A (or an Extended BASIC) screenshot this type of game is really practical. Arcade games on TI BASIC are bound to be a

instructions
playability
graphics
value for money

★ ★ ★

Awari 48K Oric 1 £5.50

Konami, 1 Marlborough Ave, Woking, Surrey

Awari is a game with origins in Africa, where it was played with sticks and stones. The rules are very simple, but the strategy is complex. For a maker's fascinating computer game for those who prefer to see their own rather than their machine's.

In this version, the display is clear and colourful, and the pieces move about at great speed once you or the computer select a move.

Micrograph is a little too fast to allow a novice to appreciate what is happening, though this is

particularly evident when, at successive happenings, the computer gets two moves out (just), and both moves are taken at once. But at least the computer's move decisions are made in seconds.

The two pages of on screen instructions are clear. However, to pressing SPACE to move from page 1 to 2, delay in releasing your finger from the key, and you miss the second page. The only way to get it back is to re-load the program.

instructions
playability
graphics
value for money

★ ★ ★

Wipe out the Tazz — before they do it for you

In a far-off galaxy, under the molting green light of a rather exotic atmosphere, is the planet Kayliff. The inhabitants, known as the Tazz, are rather peculiar — both as a race and as individuals.

They spend most of their time bouncing up and down. They also tend towards mass self-destruction, and congregate in rooms with walls that move in and crash them.

Several years after their entry into the television, a galactic official ordered them to cease this practice, in case the whole galaxy started to like it, and the galactic economy fell into disarray.

You are the Tazman. Your job is to seek out and destroy all of the Tazz who still practice these rituals, without being crushed.

Variables

LEWEL RVALLACHAR, BRYAN used to machine code
 READ CRUSH +1000 returned from mainline code
 DELAY, DELAY, RUMBLE, TAZZ used to delay
 MEM, MEM used to access character sets
 SCORE, SCORE decrements
 X, Y TAZMAN position
 BOUN, BOUN tells you on COL, COL, COL ground position

Your opponents in this game are a self-destructive race called the Tazz. You may want to destroy them — but not as much as they want to destroy themselves. Race against time in Marc Freebury's program for the Atari

This game is for Atari computers with joystick.

You must enter the rooms of moving walls, and shoot the Tazz. The walls and Tazz are indestructible, and must not be crushed. Shoot by pressing the fire button, then pushing the stick in the direction to fire.

The Tazz are worth 10 points each, but you lose 10 if a Tazz succeeds in being crushed. When all Tazz are destroyed, a score will appear for you to make your escape to the next room. As you progress, the walls move faster and the Tazz enemies become more

numerous. Can you stop the Tazz?

Tazz fire one bit of accuracy, and must be up as shown but without the REM statements. This is quite important.

When typed in, over the point, then type PRINT POSX(140)+POSX(140)+256. If the score is smaller larger than 9999 (roughly), then the game will crash. Cut all unnecessary statements from the game — this does not include the front page, which is necessary for Tazz reproduction character set redefinition and printing, such a little machine code to keep the game moving at a break pace.

How it works

100-200 vertical control. Character set definition. 200-300 main routine. 300-400 main loop. 400-500 level 1. 500-600 level 2. 600-700 level 3. 700-800 level 4. 800-900 level 5. 900-1000 level 6. 1000-1100 level 7. 1100-1200 level 8. 1200-1300 level 9. 1300-1400 level 10. 1400-1500 level 11. 1500-1600 level 12. 1600-1700 level 13. 1700-1800 level 14. 1800-1900 level 15. 1900-2000 level 16. 2000-2100 level 17. 2100-2200 level 18. 2200-2300 level 19. 2300-2400 level 20. 2400-2500 level 21. 2500-2600 level 22. 2600-2700 level 23. 2700-2800 level 24. 2800-2900 level 25. 2900-3000 level 26. 3000-3100 level 27. 3100-3200 level 28. 3200-3300 level 29. 3300-3400 level 30. 3400-3500 level 31. 3500-3600 level 32. 3600-3700 level 33. 3700-3800 level 34. 3800-3900 level 35. 3900-4000 level 36. 4000-4100 level 37. 4100-4200 level 38. 4200-4300 level 39. 4300-4400 level 40. 4400-4500 level 41. 4500-4600 level 42. 4600-4700 level 43. 4700-4800 level 44. 4800-4900 level 45. 4900-5000 level 46. 5000-5100 level 47. 5100-5200 level 48. 5200-5300 level 49. 5300-5400 level 50. 5400-5500 level 51. 5500-5600 level 52. 5600-5700 level 53. 5700-5800 level 54. 5800-5900 level 55. 5900-6000 level 56. 6000-6100 level 57. 6100-6200 level 58. 6200-6300 level 59. 6300-6400 level 60. 6400-6500 level 61. 6500-6600 level 62. 6600-6700 level 63. 6700-6800 level 64. 6800-6900 level 65. 6900-7000 level 66. 7000-7100 level 67. 7100-7200 level 68. 7200-7300 level 69. 7300-7400 level 70. 7400-7500 level 71. 7500-7600 level 72. 7600-7700 level 73. 7700-7800 level 74. 7800-7900 level 75. 7900-8000 level 76. 8000-8100 level 77. 8100-8200 level 78. 8200-8300 level 79. 8300-8400 level 80. 8400-8500 level 81. 8500-8600 level 82. 8600-8700 level 83. 8700-8800 level 84. 8800-8900 level 85. 8900-9000 level 86. 9000-9100 level 87. 9100-9200 level 88. 9200-9300 level 89. 9300-9400 level 90. 9400-9500 level 91. 9500-9600 level 92. 9600-9700 level 93. 9700-9800 level 94. 9800-9900 level 95. 9900-10000 level 96. 10000-10100 level 97. 10100-10200 level 98. 10200-10300 level 99. 10300-10400 level 100. 10400-10500 level 101. 10500-10600 level 102. 10600-10700 level 103. 10700-10800 level 104. 10800-10900 level 105. 10900-11000 level 106. 11000-11100 level 107. 11100-11200 level 108. 11200-11300 level 109. 11300-11400 level 110. 11400-11500 level 111. 11500-11600 level 112. 11600-11700 level 113. 11700-11800 level 114. 11800-11900 level 115. 11900-12000 level 116. 12000-12100 level 117. 12100-12200 level 118. 12200-12300 level 119. 12300-12400 level 120. 12400-12500 level 121. 12500-12600 level 122. 12600-12700 level 123. 12700-12800 level 124. 12800-12900 level 125. 12900-13000 level 126. 13000-13100 level 127. 13100-13200 level 128. 13200-13300 level 129. 13300-13400 level 130. 13400-13500 level 131. 13500-13600 level 132. 13600-13700 level 133. 13700-13800 level 134. 13800-13900 level 135. 13900-14000 level 136. 14000-14100 level 137. 14100-14200 level 138. 14200-14300 level 139. 14300-14400 level 140. 14400-14500 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18800-18900 level 185. 18900-19000 level 186. 19000-19100 level 187. 19100-19200 level 188. 19200-19300 level 189. 19300-19400 level 190. 19400-19500 level 191. 19500-19600 level 192. 19600-19700 level 193. 19700-19800 level 194. 19800-19900 level 195. 19900-20000 level 196. 20000-20100 level 197. 20100-20200 level 198. 20200-20300 level 199. 20300-20400 level 200. 20400-20500 level 201. 20500-20600 level 202. 20600-20700 level 203. 20700-20800 level 204. 20800-20900 level 205. 20900-21000 level 206. 21000-21100 level 207. 21100-21200 level 208. 21200-21300 level 209. 21300-21400 level 210. 21400-21500 level 211. 21500-21600 level 212. 21600-21700 level 213. 21700-21800 level 214. 21800-21900 level 215. 21900-22000 level 216. 22000-22100 level 217. 22100-22200 level 218. 22200-22300 level 219. 22300-22400 level 220. 22400-22500 level 221. 22500-22600 level 222. 22600-22700 level 223. 22700-22800 level 224. 22800-22900 level 225. 22900-23000 level 226. 23000-23100 level 227. 23100-23200 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level 576. 58000-58100 level 577. 58100-58200 level 578. 58200-58300 level 579. 58300-58400 level 580. 58400-58500 level 581. 58500-58600 level 582. 58600-58700 level 583. 58700-58800 level 584. 58800-58900 level 585. 58900-59000 level 586. 59000-59100 level 587. 59100-59200 level 588. 59200-59300 level 589. 59300-59400 level 590. 59400-59500 level 591. 59500-59600 level 592. 59600-59700 level 593. 59700-59800 level 594. 59800-59900 level 595. 59900-60000 level 596. 60000-60100 level 597. 60100-60200 level 598. 60200-60300 level 599. 60300-60400 level 600. 60400-60500 level 601. 60500-60600 level 602. 60600-60700 level 603. 60700-60800 level 604. 60800-60900 level 605. 60900-61000 level 606. 61000-61100 level 607. 61100-61200 level 608. 61200-61300 level 609. 61300-61400 level 610. 61400-61500 level 611. 61500-61600 level 612. 61600-61700 level 613. 61700-61800 level 614. 61800-61900 level 615. 61900-62000 level 616. 62000-62100 level 617. 62100-62200 level 618. 62200-62300 level 619. 62300-62400 level 620. 62400-62500 level 621. 62500-62600 level 622. 62600-62700 level 623. 62700-62800 level 624. 62800-62900 level 625. 62900-63000 level 626. 63000-63100 level 627. 63100-63200 level 628. 63200-63300 level 629. 63300-63400 level 630. 63400-63500 level 631. 63500-63600 level 632. 63600-63700 level 633. 63700-63800 level 634. 63800-63900 level 635. 63900-64000 level 636. 64000-64100 level 637. 64100-64200 level 6

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Abstract

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Low words. Koster's chair is equipped to a talking about on publications of a book called *Wonders of Information Wonders* by Professor Tom Storer of Bedford University, is produced among other things the children will increasingly do their learning at home, via their "electronic grandmother" the microcomputer.

School, Koster argued, would become a place where children learn to use socially and where they can discuss what they have learned at home.

But content simply to put his ideas down on paper, Storer had decided to set up a software company whose sole aim would be to produce educational software for the home. He called in friends, friends, Kaplinsky and Tom Mousman into putting up the money, recruited businessman Peter Lever to set up the company, and Applied Systems Knowledge — ASK for short — was in business.

ASK's first four programs, all for the VIC-20, appeared on the market in August last year. Now it has 18 VIC programs, and has just announced four for the BBC micro. Aimed at children aged 6-12, they are designed to teach basic concepts like number, shape, and use of vocabulary. Ultimately ASK wants to provide programs for all ages, up to and including adult education.

But the company doesn't want people to think of its products like computerised textbooks. According to ASK's marketing manager Joe Deppner: "We prefer people to think of it as a new medium, not a new way. Our programs are exciting to test, they're interactive, rather than passive."

"The programs aim to help children understand concepts rather than pass exams. They're also intended to be fun to use, so that children will go back to it. It's not to teach Children shouldn't know that they're learning."

An electronic grandmother may not sound very friendly, but Joe argues that "the responsiveness of the machine can be an advantage. The computer doesn't criticize you — it doesn't destroy your expectation of yourself."

The "target" or specific aims for ASK's programs are all written by working teachers. One of these teachers, for example,

Backing up the electronic granny

ASK's founder thinks that children will soon do most of their learning at home, with the aid of their friendly micro. MD Peter Lever told Candice Goodwin how ASK is catering for the home schoolroom of the future



Peter Lever is excited for his business future here

Gloria Callaway, is head teacher of a primary school in Haringey, north-east London.

When the script has been drawn up, it is discussed with ASK's consulting editor Mike Thomas and graphic designers Mike Kavanagh and Peter Leitch. Then it is passed on to one of the company's six full-time programmers, who work under the guidance of technical manager Ian Morton at the company's headquarters at 81 Upper Richmond Road, London SW13.

Once the program has been written, it is tested at schools at Camberley and north London — and ASK's employees try to use on their kids, too. Not that everything is revealed in the program released on the public. The whole process takes about six months on average.

In making sure that the programs are educationally sound, ASK doesn't want to neglect the business side — hence, says Storer, Storer's decision to talk to Peter Lever at MD Peter's background was in commodity trading, so the software market has been a new experience for him — though not, he says, a bad experience.

But it was business know-how, rather than computer experience that Tom Storer was after. "Two wasted professional careers and computer people involved. But he wanted good business people too, who knew



Technical manager Ian Morton

how to apply business concepts to the product. It isn't enough just to build a better mousetrap."

ASK's programs are currently sold by mail order and in High Street shops. In VIC programs are now listed jointly under ASK's and Commodore's names, and this is a policy the company hopes to continue in future with software for the Dragon, Acorn and TI 99-4A.

"That way, we can take advantage of the computer manufacturer's marketing organisations and resources in producing good programs ourselves," Peter said. "But we'll have to be careful not to lose our identity."

"The programs are selling well in Australia, South Africa, New Zealand and Spain, where they have been translated into Spanish. In fact they're selling better overseas than they are in the UK at present. Why should that be?"

Peter Lever said. "The market here is slow because people haven't yet made up their minds what they want a micro for."

"There are two schools of thought. One sees a micro as an on-line typewriter. The other is that the more is the learning program. People haven't yet perceived that it may be useful in education."

Bridge Master Spectrum £24.95

BridgeMaster, PO Box 161, Slough

What a delight to encounter a really professional program for a microcomputer! Bridge Master is well conceived, smoothly executed, and aimed with accuracy at a worldwide playerbase.

Four double-ended routines are supplied, with an instruction book and Begin Bridge with Items by Thomas Baner. Two of the routines talk to your computer, and the other two talk to

you, giving a smooth commentary to guide you through the intricacies of 35 bridge hands.

You can play each hand yourself, a refreshed loop telling you when you try to play an unavailable card, or you can let the computer play for you, taking the awards in any point you choose. The handling of some hands is covered, though this is not introduced in the current hands.

For a learner, the offering is ideal. For those who already play, there's much value, rather on the lines of the old 'Aussie Bridge' systems, but much more extensive. True, there are only the 35 fixed hands, and each hand can only be played one way, but it would need a gargantuan list of

memory to recall the characteristics of each.

There was only one hint of trouble. It so happened that the first cassette was lost after a program which had as PAPER, BLACK, and that produced much mystification, as the bridge program does not use the recycled PAPER WHITE condition. A missable point, but with a program so perfect in other aspects it rather stood out.

instructions	100%
playability	100%
graphics	90%
value for money	100%

★★★★★

Match Wits TI-99/4A £7

Potterswire, from Starline Software, 10 Aldgate Road, Stockport, Cheshire SK4 5AH

Lovely based on the card game Preliminary, Match Wits is a memory testing game for two to four players.

Each player has a field of 12 coloured squares that contain six pairs of abstract pictures. In turn, each player attempts to uncover a match for a card on picture on the outside of the cards, in one case point.

If a player reveals both of a pair of pictures then that player has the chance to uncover a

squire as a different player's board, to gain two bonus points. There are two skill levels to the game — the higher level was lost — the higher level was lost — the higher level was lost — the higher level was lost.

Good use is made of graphics and sound and the game was fairly absorbing once the barely adequate computer screen followed. You could of course play the same game with a pack of playing cards — but that's not playing.

instructions	90%
playability	90%
graphics	70%
value for money	90%

★★★★★

Food for thought

If you're feeling intellectual, these programs are designed to bend your mind. Here are our reviewers' thoughts on them...

Black Box TI-99/4A £6

Starline Software, 10 Aldgate Road, Stockport, Cheshire SK4 5AH

Black Box is the ultimate version of Mancala. Originally a board game, it transfers well to a computer.

You use your power of deduction to locate a given number of stones (up to 10) which we hidden in and it's a goal. There are 10 rows positioned around the edge of the grid which are used to detect the on-onliness of each row, depending on whether a row is absorbed, deflected or released.

When you finish the game where the stones are, you move your games. A stone is given based on the proportion of stones you track down and the number of rows you use.

Understanding exactly how rows are deflected and released took quite a fully comprehended. The instructions give full details on the origins of the game, but provide only a few comments and one example for the complete beginner.

instructions	100%
playability	70%
graphics	50%
value for money	60%

★★★★

Backgammon Dragon £8

Marsdale, 46 Tyne Road, 2A, North, Cornwall PL23 5LR

A machine code version of Backgammon with high resolution graphics and full colour.

There are variations of play. A game can be played against a friend, the computer, or you can be back and watch the computer play itself. The computer shows the dice or you can input your own moves.

Apparently you can use a Marsdale light pen — I don't possess one so I don't try the op-

tion. There is even an option to switch off the sound — good thinking. Microdial! Actually the sound effects are quite good.

I played many games with different options each time and found each game thoroughly enjoyable. This is an excellent representation of the game with good presentation on screen.

instructions	90%
playability	90%
graphics	90%
value for money	90%

★★★★★

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[illegible]

STOP PRESS 1 NEW VIC 30 FALCON FIGHTER STOP PRESS STOP PRESS
ONLY 2000

Three Games For Children 48K Oric-1 £7.95

Bentley Computer Centre, 74 Watford Road, Barnham, Stokeness Road, Suffolk ST16 1ED.

One of the main difficulties in writing "educational" software is getting the right mixture of challenge and interest. Without either of these the child soon loses interest.

"Three games for children" find the greatest of interest successfully as the learner just falls down rather on the latter.

The program loaded first time and then offered a choice of four options — counting shapes

spelling colours on, rather than spelling, typing.

Counting shapes doesn't seem like something children only do at school and asks how many of each there are. Spelling colours produces three large numbered shapes and asks, in turn, for the children to spell out what colour they are.

The final game appears to be rather out of place on a educational tape.

instructions	45%
playability	55%
graphics	60%
value for money	40%

★ ★ ★

Learn a thing or two from your micro

Younger members of the family can use the micro too, with games that will teach them maths or improve their spelling.

Word Build 32K BBC £5.95

OTM Software, 441 Park Road, Leeds, Yorks.

Educational programs are improving all the time. This program, in an advance due to the carefully-planned display, superior entry trapping and user friendliness.

Clear, detailed instructions come with the cassette and are reinforced on screen.

The program offers a series of four sets of words (Green, Amethyst, Gold, Green/Toon) and miscellaneous words each with three levels of difficulty. Words range from cat to flower.

Words are displayed with letters "unscrambled" in alphabetical order.

The player has to incorporate the letters to spell the correct word, a score is kept and a picture of a flower is built up as each correct letter is entered.

Colour is used and scored is optional. The program was well received by pupils at my local school and the teachers were impressed by the ease with which their own word lists could be substituted.

instructions	95%
playability	85%
graphics	70%
value for money	95%

★ ★ ★

Words, Words, Words VIC-20 plus 16K £8.95

ASK, London House, 41 Ash Road Road, London SW13 2EP

Children do have fantastic imaginations. If they set their minds to work on the characters of VIC games they'll love this program.

The idea is to practice spelling for five-eight year-olds using words chosen from a story, farm, city, orchard, forest, meadow, house or castle.

Objects appear, and if you complete the list "I win a

with the currently spelled word. The object goes the same.

You're allowed two goes and a certain number of other names are permitted: man or farmer, lorry or road. With some objects are easy to identify: man or a boy, dog or cat and so that makes sense in the end.

For the adult member there is a dictionary of the 50 or so words that appear.

instructions	85%
playability	75%
graphics	80%
value for money	75%

★ ★ ★

Hide and Seek VIC-20 plus 8K £8.95

ASK, London House, 41 Ash Road Road, London SW13 2EP

This is a game with educational objectives. It describes and is a variation on Pictionary — you know, take over the cards from a guess, take over the cards from a guess. It develops your short term memory, so they say.

With a pictorial tape range of three to 12, a fancy (but not golden) and even some younger will get this out of it. My three year old and I did.

In fact, it's a two-person game. In fact, it's a two-person game. In fact, it's a two-person game. In fact, it's a two-person game.

Hide A has an object with object-like a block, ring, a fish or rainbow. Hide B has an object and you choose between nine flowers and one house in the object. It also offers five grades of difficulty, from hard to super hard (100%).

The graphics are excellent. The instruction book clear.

instructions	95%
playability	90%
graphics	95%
value for money	95%

★ ★ ★

HIDE & SEEK



WORDS, WORDS, WORDS



What's the use of your micro?

These programs have an answer for anyone who's asked what home computers can be used for

Key Trainer 48K Oric 1 £5.50

Artemis, 1 Marlborough Drive, Woking, Surrey

This program took some time to load. After trying it out, I'm not sure it was worth the wait.

The representation of the keyboard is using the keyboard, and all instructions for the first set are displayed in sequence, one, though you're not told this.

To sum up, you're not very happy, and the computer confirms it. Even then, as you have to press the key corresponding to what is shown in random by the

computer — the further you've progressed, the greater the selection of choices from which you've had to choose. You can look at your personal records, but it's not as easy as the more serious.

The last two screens are slightly different. In screen 10, you type in 1 to 10 lines of text, which are then printed in a word processor. Except I seem to require you to copy the text you have just typed in. I couldn't see the point of this.

instructions
special use
display
value for money

100%
40%
10%
10%



Vu-File BUC cassette & disc £14.95

Probit, 3 Haverstock Hill, London NW1 4AD

Just an old boy Vu-File before they call it "Vu-File".

The file is so versatile it can't be all the possibilities. But the main idea of the program is to provide a user definable data base, in which you can set up a personal format of data. The can then be used to tape, or disk.

The whole file is loaded into working memory, so it is instant

in use to 100, but with very sophisticated methods and you can search for it. The demonstration file supplied. Contains, has 150 records and eight fields and full code with 40% of memory!

Vu-File the program is well documented. It is an maintenance — it comes with the best user manual I've ever seen. Every option is covered by the booklet.

instructions
playability
display
value for money

100%

100%

100%

100%



Comp-U-Share 48K Spectrum £9.95

Micrologix, Quanta Systems & Software, 230-236 Lavender Hill, London SW11 1LE

This presentation program is a personal record in an attractive manner. It contains the standard program and a 19-page instruction manual. It doesn't include the regular files of data on your phone.

Up to 100 records in 100 records can be "printed" by the program. The program doesn't allow you to which records you should make. It is a program to

to calculate most of the values in various areas, and makes good making in investment.

The file will only work after access at the time of share purchase and current details. This means to be made, but you can't be able to get any other number of points in time can be stored in separate files.

An almost identical version is available for the ZX81.

instructions
playability
display
value for money

100%

100%

100%

100%



Beebsynth BUC B Cass. £7.95 Disc £10.95

Cherry, 211 Tinsford Road, Walsford, Cheshire CW4 6AN

What is Beebsynth? Having played with it for hours, I can say that I think it's one of the best for the price of one — a

The first part is a study in how you design sounds for music.

It is a program, so for users the most part of the program. You can change all the parameters of the sound/sequence rather easily. You can change all the parameters of the sound/sequence rather easily. You can change all the parameters of the sound/sequence rather easily.

displayed at the top of the screen.

The second part is a study in how you design sounds for music. It is a program, so for users the most part of the program. You can change all the parameters of the sound/sequence rather easily. You can change all the parameters of the sound/sequence rather easily.

instructions
playability
display
value for money

100%

100%

100%

100%



Best for software — every week

ORIC - 1

KEY TR



A switch in time for your Oric-1

You won't find any mention of system variables in the Oric-1 manual. A most unusual, you might think, but as I will demonstrate, the addresses and functions of these variables can be very important to programmers.

You can't get them from me from Oric Products. When I requested details, I was curtly informed that the Oric's system variables are secret! So it's up to programmers to find it out for themselves.

This article is about some of the variables which I have discovered. As the title suggests, they concern switches and time.

When Oric 1 is powered-up, the machine is in CAPS mode, and the keyboard sounds and flashing cursor are turned on. These (and other) functions are switched on and off by a 'toggle switch' action from within a program (with a PRINT CHR\$(0) command), or direct from the keyboard with the CTRL key.

This turns on a function previously off, and off if previously on, but does not exert absolute control of these functions.

This function is unacceptable if every program is loaded into the computer straight after power-up, when the status of these functions are known. However, it would be very convenient to disconnect the power and reconnect in order to reset the machine every time we want a new program.

The system variable at address 418 contains "flags" which indicate whether some of these functions are on or off. These are shown in table 1.

The way to control these functions within a program is to POKE an appropriate value into address 418. These values can be calculated from the table.

For example, if you wanted to have the flashing cursor on and keyboard off (with VDU on and double height and escape off), add up the appropriate values in the table ($1 + 8 + 2 + 8 + 0 = 19$). POKE 418,19 causes the cursor to be on and keyboard to be off. For cursor off and keyboard on, you would use POKE 418,2.

The "flag" for CAPS lock at bit 7 of byte 534. I'm not sure of the purpose of the other bits, so I would suggest the following program line:

```
IF PEEK (534) > 127 THEN
  POKE 534,128:GOTO 200: to ensure
  that CAPS lock is off, and
  IF PEEK (534) < 128 + 128 THEN
    PRINT CHR$(20), to turn on
    CAPS lock.
```

Time is an important element in many games; a task has to be accomplished within a time

Want to hear a secret? To make would-be programmers' lives easier, David Nowotnik reveals some of the Oric-1's hidden system variables

Table 1 — some Oric 1 'toggle switch' functions

Function	PRINT CHR\$(0)	CTRL key	Bit no.	418 value off
—	—	—	—	—
CAPS lock	30	T	0	—
Keyboard	5	F	0	8
Flashing cursor	27	Q	1	0
VDU	39	S	2	0
double height	4	D	64	0
escape	27	—	128	0

Although "escape" has a flag on byte 418, it is not actually a 'toggle' function.

Time, or seconds is a measure of the time taken.

The calculation of time on the Oric 1 involves use of the system

variable at address 520 holds a value which varies according to which key is pressed. If no key is pressed, the value is 56. The BASIC command KEYS does not work, as presumably the manual suggests. So, if you have a game in which you wish to check for any keypress, the line

IF PEEK(520) <> 56

after "check" is set to a high value at the start, and the value at the start is examined. The time, in seconds, is the difference divided by 100.

For example, start the clock with the command POKE 520,5000 (which is the highest possible value).

The time elapsed at the end of a game is

TIME = (KEYS - 5000) / 100 (seconds)

If you are checking for a time

limit, use a line such as

IF PEEK(520) < 5000

THEN

where TIME is a pre-defined

variable equal to the time limit in

seconds.

Now then, as the system variable drops by 100 every second, a well-timed 500 seconds before the highest possible value is 5600. This value to follow (not 5400). Therefore, this timing method can only be used for time periods up to 54 seconds.

A final Oric tip: the system variable at address 520 holds a value which varies according to which key is pressed. If no key is pressed, the value is 56. The BASIC command KEYS does not work, as presumably the manual suggests. So, if you have a game in which you wish to check for any keypress, the line

IF PEEK(520) <> 56

THEN

is better than

IF KEYS <> "" THEN

If you have discovered other Oric system variables, why not write and tell us about them. Then we can let everyone in on the secret!



Close encounters of the hostile kind

Intergalactic harmony is the last thing on the minds of the aliens in these new action games.

**Mission
Mercury
VIC-20 ET.95**

Phyllis Korman, M.D., President
American Psychiatric Association

Parse the lead news. Mission: Mercury turns out to be just a hoisted old news item. You have to rescue misplaced humans from a planet no less by steering a small *Orion* craft through a mine-

The good news is that the sound is well written, with some smooth melodic graphs. The question is will it be as good as the rest of the album.

I found it impossible to give up all efforts to maintain access. I "gave" the keep up the quality, but upon their products up with a light more originality, they should be well in their new way.

manufacturers	70%
playability	60%
graphics	55%
price/performance	70%



**Space
Adventure
B0C B £7.95**

Robert C. Allen, 51-01 Portobello
Road, London N11

Not just an adventure, nor just a reaction piece, but a bit of both. You must wander the rooms, at an alien quonship, collect four keys to locked rooms containing treasure, grab them.

Or to show you are without
your left support or weapons are
exhausted you might, but power
picks are desired should be

This is a first class program with instructions on both laser and an screen. Graphics, output and sound are superb. The status display is easy to read and gives you all the information you need. Producing a map with your termite positions.

My only problem I had with
Square Adventure was its pricing.
My friends always bought

Interactions



P5 Pesteroids
T1-99/4A
£10.00

PC Software, from Stainless Soft-
ware, 70 Allison Road
Rockport, Chelsea

"Your ship has entered a dangerous zone of shifting reefs. You are now in a group of reefs drift through the waters and endanger your ship."

It's true to say that in the past programs, the networks tended toward very strange shapes.

[illegible]

management
planning
structure



99 Vorders
TI-99/4A
£10

Planning Software, 10 Allison
Road, Marlborough, Chicago

If you're with a Space Invader fan, you'll enjoy this version of Asteroids. However, over time, it's already being attacked online which has blown its hot work out of three games.

After enough craft have been shipped, the mother ship takes off and the plane lands quickly for the next wave. Good graphics, and the movement is fast.

Instructions	Age
playability	Age
Product	Age
value for money	Age



**BUG
BOMB**



Bug Bomb
 MAC # E7.95

Wiggins, Carolyn, 64/65 Portlandville
Wiggins, Carolyn, 64/65

Fancy deliberately putting him in a program? That is an environmentalist's nightmare (or worse, depending on his exact argument).

You more accurately predict
ing to destroy the power-sapping
beast. Teaching a dog to bark
from these lists — they also fit
back at you. You have up to three
seconds, which are identified below
you and continue to move in the
same until hitting a dog or
yourself.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

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 2. *Peromyscus maniculatus*
 3. *Reithrodontomys*



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SCW 17

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The sound of breaking micros

Do other computer enthusiasts share my problem? I've tried every computer, and they're all built like stage jelly: when they fall down, they fall through the keyboard, rattling the circuitry and chips.

I've had a wobbly RAM pack, the disc drive goes off every 10 minutes, I lose colour and picture from my television, and all my tapes get skewed up either by my brother or by the cassette recorder. Could I possibly be accident-prone?

Because of these difficulties I've damaged not only my own but also my friends' computers, thus losing my friends.

Is this just to the man who sits on local computer dealers say they'll phone the police if I step into their shops.

Has anyone got any ideas for a computer which is unbreakable and which you get out of a confusion pack (or, not a ZX81)? I've already tried that?

Should I commit suicide? Perhaps I should never have taken up computing as a hobby. Oh hang it all!

Over Despondently, Belfast

East Londoners club together

The East London Amateur Computer Club meet on the second and fourth Tuesday of each month in the main hall of the Harrow Green Library, Leytonstone, Haringey east of York, and visitors are welcome.

The first meeting of the month is usually a talk on micro-related subjects, and the second meeting given members a chance

to discuss problems alone, and programs.

Members of all types are drawn, including Beeks, Glade Oliver, TREND, Neocore, Per Seconator, Apollo, Neocore, One, and a 7864 (joking).

On the last Thursday of the month we have a special meeting for new groups, and a lecture on basic file systems.

The current membership fee is five pounds a year, half price for juniors and pensioners. Anyone interested in learning more about the club should ring the chairman, Fred Langer, on 334 1293, or myself on 334 3441. J Turner, London E11

Interface Intrigue

We ordered the Sanyo Spectra 85152 C interface from Cobra Technology, and waited 12 weeks for it to arrive, even though our cheque was cashed immediately.

Despite what is stated on the packaging, the Cobra interface will not allow you to use LPlus or LPlus — exactly the main reason for buying such a product.

Despite a personal visit to Cobra and several telephone calls, we have not received a refund.

Automata has been in the micro-business a little longer than most. Unfortunately like Cobra's, horns all of us, and we see it once and none again, from the biggest in the land down to the back street cowboy.

To all of you in the micro industry — you must not advertise goods that are not readily available, you must not make money in the bank before you despatch the goods, and you must not mislead the customer by your advertising.

Automata, Professionals, Hants

Jack Allmon of Cobra said: "We have never claimed that the Cobra interface will do LPlus or LPlus — if Automata had asked us about that before ordering, we would have told them. If Automata want their money back, they can have it — but they haven't asked us for a refund."

"We have production problems, like microchips, which is shorter of 5000 chips. But we saw Automata's word processor package with the interface in mind, so for the delay."

Why you should dissect your games

Having just read the Man's View in HCW on 10/1, I would like to make a few points.

Firstly, the TV screen computer interface program is known as a "game" because under a cat's bottom, and again that you don't need to know how the car works to "drive thousands of miles". While computer owners need not know how the electronics of computers work — I certainly don't — they do need to know about the program that "drives" the computer.

Secondly, it is all very well for the computer owner who is only interested in games not to understand programming, but business owners need to understand the purpose in order to know whether they will need a disk drive, a GP/M-compatible computer, 44K or 144K of RAM.

Thirdly, though I am interested mainly in games, I have learned a great deal through learning to program, and hope to make a career out of it.

So, all you game players — dissected games if you want. It is well rewarding, especially if it enables you to subsequently invent your own games and programs. And who knows? It may provide you with a job in years to come. David Lester, Pinner, Middlesex

★ Software winner

Is your reviewer crazy?

May I assure your readers that it was not a bug that prevented your reviewer from mentioning the link in the third screen of King Kong, as thousands of customers who have bought this game will testify. It requires perfect timing and that is all. It is always difficult to create a game that will provide enjoyment and excitement for a length of time yet be easy for a beginner.

I must also record your reviewer over Phoenix's Tomb. You do not have to reload the programmes again if you meet sudden death. You just answer the question. Try again. A Captin, Ailing, Norfolk, Surrey



Top Ten programs for the Dragon 32

- | | | |
|----|------------------|----------------|
| 1 | The King | Murdoch (1) |
| 2 | Pages (Impress) | Murdoch (2) |
| 3 | Space Wars | Murdoch (2) |
| 4 | Dragon Talk | Silvernail (2) |
| 5 | Defence | Murdoch (4-5) |
| 6 | Kingmaker Attack | Murdoch (4) |
| 7 | Chess | Dragon (8) |
| 8 | Grand Prix | Silvernail (2) |
| 9 | Computer Vexes | Dragon (1-3) |
| 10 | Dragon Quest | Dragon (1-3) |

Compiled by Scott. Figures in brackets are last week's positions

Top Ten programs for the ZX81

- | | | |
|----|-------------------|---------------------------|
| 1 | 3D Mountain Maze | New Generation (1) |
| 2 | Flight Simulation | Pagan (2) |
| 3 | 3D Scramble | Cluckwell (4) |
| 4 | Adam Dropout | Silvernail (2) |
| 5 | Galeforce | Arise (4) |
| 6 | Chess | Pagan (2) |
| 7 | 10 Games for 1K | J.K. George (5) |
| 8 | Astroids | Silvernail (1-3) |
| 9 | Autumn | Arise (4) |
| 10 | Night Sender | Digital Integration (1-3) |

Compiled by W. H. Smith. Figures in brackets are last week's positions

Top Ten programs for the VIC 20

- | | | |
|----|--------------------|-----------------|
| 1 | Panic | Big Byte (1) |
| 2 | Acropolis | Impress (2) |
| 3 | Comanche | Big Byte (4) |
| 4 | Woods Warden | Impress (2) |
| 5 | Catcha Scamper | Impress (3) |
| 6 | Archie | Acropolis (1) |
| 7 | Antarctic | Big Byte (4) |
| 8 | Blitz | Comanche (1-3) |
| 9 | Scorpio in Space 1 | Comanche (2) |
| 10 | Chapman | Acropolis (1-3) |

Compiled by Scott. Figures in brackets are last week's positions

Top Twenty programs for the Spectrum

- | | | |
|----|--------------------|----------------------|
| 1 | Panic | Medawar House (2) |
| 2 | Flight Simulation | Pagan (1) |
| 3 | Jet Pac | Ultimate (4) |
| 4 | Protagoniser Tower | Richard Shepherd (2) |
| 5 | The Hobbit | Medawar House (3) |
| 6 | 3D Talk | Ultimate (4) |
| 7 | An Ostrich | Impress (3) |
| 8 | Harold Goes Home | Panic/H House (1) |
| 9 | Wumpus House | Pagan/H House (1) |
| 10 | Chess | Pagan (1) |
| 11 | Flamenco | Pagan (1) |
| 12 | Test Match | Comanche (1) |
| 13 | 3D Tunnel | Comanche (1) |
| 14 | Kingmaker Attack | New Generation (1) |
| 15 | Test Quiz | Silvernail (1) |
| 16 | Orion | Cluckwell (1) |
| 17 | Acropolis | Silvernail (2) |
| 18 | Scorpio in Space 1 | Impress (3) |
| 19 | Protagoniser Tower | Silvernail (1-3) |
| 20 | Panic | Ultimate (2) |

Compiled by W. H. Smith. Figures in brackets are last week's positions

U.S. SCENE

Now they'll talk our language

I suppose this item does not strictly fall under the heading of what you consider home computers, but it will certainly affect a lot of Americans over time.

In the last month, *Prosal* has restructured its marketing and distribution plans. Unlike all other software-like services, *Prosal* is no longer running on a mainframe computer. After evaluating the competition, responsibility for making the service profitable has been taken over by Torch Computer Ltd.

Now, instead of running on a centrally located GEC main frame, the *Prosal* database will be run from a network of Torch computers connected to 40Mbit disc drives, each of which can apparently store up to about 40,000 text screen pages. When it was first introduced, *Prosal* was received with something other than wild abandon. I felt that this was probably due to the fact that the initial database was mostly European, and therefore not entirely relevant to our needs.

Torch feels that by creating local and therefore more interesting and relevant data bases that interest can be reawakened. Torch must do this all on their own, as apparently no more money will be put into the project by Telestar. I believe that if Torch can indeed come up with a relevant data base, that day have every chance of being successful.



Uniflex, a company based in Oakland, California, has introduced a new home menu with a host of "Torch/Prosal"™ products, called the Stone House Computer, a computer capable to run Apple II and CP/M software in addition to their original software to run on the company's proprietary operating system called "Rex"™. The computer is expected to cost less than \$500, and will be available September.

This computer takes advantage of the "Wagline"™ device which I described in last week's column. The drive can store up to 12MB, and can be expected to host a 40K program in less than 20 seconds.

The unit will allow memory expansion up to 60K RAM, will accept Asian compatible peripherals, have an RS-232 port, and will have a disc drive. Using a 1600 microprocessor, the unit will have 15 colours capability, will display upper and lower case characters, and will have a 70 key upper/lower key keyboard has top 13 special function keys, and will use 4K of ROM to auto-load the machine and load programs from the memory floppy.

The machine will come with a great deal of software included in the price. This includes the software for the Wagline™, BASIC by Microsoft, a spreadsheet program, a word processor, and game software, with CP/M to follow, shortly. The unit will also be offered with an adapter module that can take Commodore game machine owners to link their machines to the computer.

In the new games, *Jameson*™ program, can be shipped and saved to the Wagline™. Uniflex is planning to release games for the Atari and Coleco machines on special game systems.

The same company is also getting ready to announce an expansion unit for the VIC-20 which will have a built in 60K Wagline™. The device will look like a disc drive to the VIC.

They are working on developing similar units for the Commodore 64 as well. I will let you know what happens when the machine actually hits the marketplace. On of sport again. See you next week.

Red Lee

Fairfield, California

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 9. **Identify the author's structure.**
 10. **Identify the author's language.**

1990-1991 1991-1992 1992-1993 1993-1994 1994-1995 1995-1996 1996-1997 1997-1998 1998-1999 1999-2000 2000-2001 2001-2002 2002-2003 2003-2004 2004-2005 2005-2006 2006-2007 2007-2008 2008-2009 2009-2010 2010-2011 2011-2012 2012-2013 2013-2014 2014-2015 2015-2016 2016-2017 2017-2018 2018-2019 2019-2020 2020-2021 2021-2022 2022-2023 2023-2024 2024-2025 2025-2026 2026-2027 2027-2028 2028-2029 2029-2030 2030-2031 2031-2032 2032-2033 2033-2034 2034-2035 2035-2036 2036-2037 2037-2038 2038-2039 2039-2040 2040-2041 2041-2042 2042-2043 2043-2044 2044-2045 2045-2046 2046-2047 2047-2048 2048-2049 2049-2050 2050-2051 2051-2052 2052-2053 2053-2054 2054-2055 2055-2056 2056-2057 2057-2058 2058-2059 2059-2060 2060-2061 2061-2062 2062-2063 2063-2064 2064-2065 2065-2066 2066-2067 2067-2068 2068-2069 2069-2070 2070-2071 2071-2072 2072-2073 2073-2074 2074-2075 2075-2076 2076-2077 2077-2078 2078-2079 2079-2080 2080-2081 2081-2082 2082-2083 2083-2084 2084-2085 2085-2086 2086-2087 2087-2088 2088-2089 2089-2090 2090-2091 2091-2092 2092-2093 2093-2094 2094-2095 2095-2096 2096-2097 2097-2098 2098-2099 2099-2100 2100-2101 2101-2102 2102-2103 2103-2104 2104-2105 2105-2106 2106-2107 2107-2108 2108-2109 2109-2110 2110-2111 2111-2112 2112-2113 2113-2114 2114-2115 2115-2116 2116-2117 2117-2118 2118-2119 2119-2120 2120-2121 2121-2122 2122-2123 2123-2124 2124-2125 2125-2126 2126-2127 2127-2128 2128-2129 2129-2130 2130-2131 2131-2132 2132-2133 2133-2134 2134-2135 2135-2136 2136-2137 2137-2138 2138-2139 2139-2140 2140-2141 2141-2142 2142-2143 2143-2144 2144-2145 2145-2146 2146-2147 2147-2148 2148-2149 2149-2150 2150-2151 2151-2152 2152-2153 2153-2154 2154-2155 2155-2156 2156-2157 2157-2158 2158-2159 2159-2160 2160-2161 2161-2162 2162-2163 2163-2164 2164-2165 2165-2166 2166-2167 2167-2168 2168-2169 2169-2170 2170-2171 2171-2172 2172-2173 2173-2174 2174-2175 2175-2176 2176-2177 2177-2178 2178-2179 2179-2180 2180-2181 2181-2182 2182-2183 2183-2184 2184-2185 2185-2186 2186-2187 2187-2188 2188-2189 2189-2190 2190-2191 2191-2192 2192-2193 2193-2194 2194-2195 2195-2196 2196-2197 2197-2198 2198-2199 2199-2200 2200-2201 2201-2202 2202-2203 2203-2204 2204-2205 2205-2206 2206-2207 2207-2208 2208-2209 2209-2210 2210-2211 2211-2212 2212-2213 2213-2214 2214-2215 2215-2216 2216-2217 2217-2218 2218-2219 2219-2220 2220-2221 2221-2222 2222-2223 2223-2224 2224-2225 2225-2226 2226-2227 2227-2228 2228-2229 2229-2230 2230-2231 2231-2232 2232-2233 2233-2234 2234-2235 2235-2236 2236-2237 2237-2238 2238-2239 2239-2240 2240-2241 2241-2242 2242-2243 2243-2244 2244-2245 2245-2246 2246-2247 2247-2248 2248-2249 2249-2250 2250-2251 2251-2252 2252-2253 2253-2254 2254-2255 2255-2256 2256-2257 2257-2258 2258-2259 2259-2260 2260-2261 2261-2262 2262-2263 2263-2264 2264-2265 2265-2266 2266-2267 2267-2268 2268-2269 2269-2270 2270-2271 2271-2272 2272-2273 2273-2274 2274-2275 2275-2276 2276-2277 2277-2278 2278-2279 2279-2280 2280-2281 2281-2282 2282-2283 2283-2284 2284-2285 2285-2286 2286-2287 2287-2288 2288-2289 2289-2290 2290-2291 2291-2292 2292-2293 2293-2294 2294-2295 2295-2296 2296-2297 2297-2298 2298-2299 2299-2300 2300-2301 2301-2302 2302-2303 2303-2304 2304-2305 2305-2306 2306-2307 2307-2308 2308-2309 2309-2310 2310-2311 2311-2312 2312-2313 2313-2314 2314-2315 2315-2316 2316-2317 2317-2318 2318-2319 2319-2320 2320-2321 2321-2322 2322-2323 2323-2324 2324-2325 2325-2326 2326-2327 2327-2328 2328-2329 2329-2330 2330-2331 2331-2332 2332-2333 2333-2334 2334-2335 2335-2336 2336-2337 2337-2338 2338-2339 2339-2340 2340-2341 2341-2342 2342-2343 2343-2344 2344-2345 2345-2346 2346-2347 2347-2348 2348-2349 2349-2350 2350-2351 2351-2352 2352-2353 2353-2354 2354-2355 2355-2356 2356-2357 2357-2358 2358-2359 2359-2360 2360-2361 2361-2362 2362-2363 2363-2364 2364-2365 2365-2366 2366-2367 2367-2368 2368-2369 2369-2370 2370-2371 2371-2372 2372-2373 2373-2374 2374-2375 2375-2376 2376-2377 2377-2378 2378-2379 2379-2380 2380-2381 2381-2382 2382-2383 2383-2384 2384-2385 2385-2386 2386-2387 2387-2388 2388-2389 2389-2390 2390-2391 2391-2392 2392-2393 2393-2394 2394-2395 2395-2396 2396-2397 2397-2398 2398-2399 2399

Outdoors rose from W.H. Brown and look out for them in each year as *Quercus*, *Myrica*, *Juniper*, and all the others throughout the year.

